ABSTRACT

In a plane detection apparatus, a plane detection unit (3) includes a line fitting block (4) to select a group of distance data points being in one plane from distance data forming an image and extract lines from the distance data point group, and a region growing block (5) to detect one or more planar regions existing in the image from a group of all lines included in the image and extracted by the line fitting block (4). The line fitting block (4) first draws a line D1 connecting end points of the distance data point group, searches a point of interest *brk* whose distance to the line L1 is largest, segments the data point group by the point of interest *brk* when the distance is larger than a predetermined threshold, and determines a line L2 by the least-squares method when the distance is smaller than the predetermined threshold. In case there exists a larger number of data points than a predetermine number on one side of the line L2, the data point group is determined to be in a zig-zag shape, the data point group is segmented by the point of interest *brk*. These operations are done repeatedly. Thus, a plurality of planes robust against noises is detected simultaneously and accurately from distance data including measurement noises.